

REMARKS

The rejection of Claims 1-4 under 35 U.S.C. § 102(e) as anticipated by U.S. 6,841,618 (Masuda), is respectfully traversed. Masuda discloses a thermoplastic polymer composition obtained through dynamic vulcanization performed by mixing an ethylene-vinyl alcohol copolymer (I), a modified block copolymer (II) which comprises an aromatic vinyl polymer block and a conjugated diene polymer block and which has a functional group consisting of a carboxyl group and/or its derivative, and an amine crosslinking agent (III) (column 1, line 56ff). Masuda discloses further that his thermoplastic polymer composition may additionally contain a paraffin oil in an amount preferably not more than 200 parts by weight based on 100 parts by weight of the modified block copolymer (II) (column 7, lines 34-50), and additional polymers, such as polyethylene and polypropylene (column 7, lines 61-66).

Masuda neither anticipates nor otherwise renders the presently-active claims unpatentable. Masuda's thermoplastic polymer composition results in a crosslinked modified block copolymer dispersed in the ethylene-vinyl alcohol copolymer (column 1, lines 52-55). In the present invention, on the other hand, as recited in above-amended Claim 1, the ethylene-vinyl alcohol copolymer (A) is in the form of particles that are dispersed in a matrix which includes modified block copolymer (I).

For all the above reasons, it is respectfully requested that the rejection over Masuda be withdrawn.

The rejection of Claims 1-4 under 35 U.S.C. § 103(a) as unpatentable over U.S. 5,332,784 (Shiraki et al), is respectfully traversed. Shiraki et al is drawn to a terminal modified block copolymer having the remainder of an amino group- or imido group-containing terminal-treating agent bonded to the copolymer, wherein the copolymer is a block copolymer of a conjugated diene and a vinyl aromatic hydrocarbon compound

(Abstract). A number of different utilities have been disclosed for the terminal-modified block copolymer therein, including combination with a thermoplastic resin (column 1, lines 26-29). Softeners may be present (column 13, line 10ff). The thermoplastic polymers preferably contain a functional group which is capable either of chemically combining with a polar group-containing atomic group present in the terminal-modified block copolymer or of exhibiting a strong interaction therewith (sentence bridging columns 16 and 17), which thermoplastic polymers include vinyl alcohol-type polymers such as ethylene-vinyl alcohol copolymers (column 19, lines 52-67). The Examiner particularly relies on Example 80 therein, which describes a composition comprising 90 parts by weight of the terminal-modified block copolymer, and 10 parts by weight of an ethylene-vinyl alcohol copolymer. In addition, while not relied on by the Examiner, Example 79 describes a composition comprising 75 parts by weight of the terminal-modified block copolymer, 20 parts by weight of the ethylene-vinyl alcohol copolymer, and 5 parts by weight of polyethylene. The Examiner recognizes that no examples in Shiraki et al show all of the presently-required three materials but holds that “selection of such from the patent that would have been obvious ... in the expectation of adequate results absent any showing of surprising or unexpected results.”

In reply, aside from the fact that the present component modified block copolymer (I) is different from the terminal modified block copolymer of Shiraki et al, the specification herein contains comparative data demonstrating the importance of employing the presently-recited components in the recited amount ranges. Examples 1-9 are according to the presently-claimed invention; Comparative Examples 1-6 are not. The Examples and Comparative Examples use materials described in the specification beginning at page 34, line 23. The Examples and Comparative Examples were subjected to various tests, including measurement of oxygen permeation coefficient, described in the specification beginning at page 32, line 19, and measurement of hardness, described in the specification beginning at

page 33, line 4. The compositions and the results thereof are shown in Table 1 at page 37 of the specification for the Examples, and in Table 2 at page 38 of the specification for the Comparative Examples. The data show that using the same materials, operating outside the presently-recited amount ranges causes a deficiency in either the oxygen permeation coefficient or the ISO type A hardness. Thus, in Comparative Examples 1 and 5, the ISO type A hardness is too high. In Comparative Examples 2-4 and 6, the oxygen permeation coefficient is too high. The comparative data is discussed in greater detail in the specification beginning at page 38, line 16 as follows:

When the thermoplastic polymer compositions of Examples 1 through 9 that were manufactured by using the above-described ethylene - vinyl alcohol copolymer (A) and polymer mixture (B) (block copolymer (I), rubber softener (II)) were employed, good gas barrier properties represented by an oxygen permeation coefficient of about 1300 through about 15000 mL · 20 μ m/m² · day · atm and flexibility represented by an ISO type A hardness of 56 through 90 were obtained. Furthermore, in Examples 6 through 9 in which the polypropylene resin (C) was admixed, the peel strength with respect to polypropylene was 19-63 N/25 mm.

Further, the results shown in Table 2 demonstrate that the thermoplastic polymer composition of Comparative Example 1 in which the ratio of the ethylene - vinyl alcohol copolymer (A) and the polymer mixture (B) (block copolymer (I) and rubber softener (II)) is 60:40 has excellent gas barrier properties, but poor flexibility, and the thermoplastic polymer composition of Comparative Example 2 in which the ratio is 5:95 has poor gas barrier properties. Furthermore, it is clear that the thermoplastic polymer composition of Comparative Examples 3 and 4 in which the ratio of the block copolymer (I) and rubber softener (II) in the polymer mixture (B) is shifted from the range of 30:70 through 90:10 has poor gas barrier properties. It is also clear that the thermoplastic polymer composition of Comparative Example 5 in which the ratio of the polyolefin resin (C) to the sum of the ethylene - vinyl alcohol copolymer (A) and the polymer mixture (B) is 100:40 has excellent gas barrier properties, but poor flexibility. It is also clear that the thermoplastic polymer composition of Comparative Example 6 in which the modification ratio of the block copolymer (I) is 0 wt.% has poor gas barrier properties.

One skilled in the art reading Shiraki et al would not have appreciated the required presence of the components of the present invention and their respective amounts, and how they produce a good balance of oxygen permeation and hardness properties. Indeed, the comparative data of record is more probative than any potential comparison with Shiraki et al. Compare *Ex parte Humber*, 217 USPQ 265 (Bd. Pat. App. & Inter. 1981) (**copy enclosed**) (comparative data showing the claimed chlorine-containing compounds to be unexpected over various (non-prior art) chlorine-containing isomers was accepted as more probative over prior art, drawn to non-chlorine containing analogs of the claimed compounds, asserted to be closest.

For all the above reasons, it is respectfully requested that the rejection over Shiraki et al be withdrawn.

The objection to the Abstract is now moot in view of the above-discussed amendment. Accordingly, it is respectfully requested that the objection be withdrawn.

All of the presently-pending claims in this application are now believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

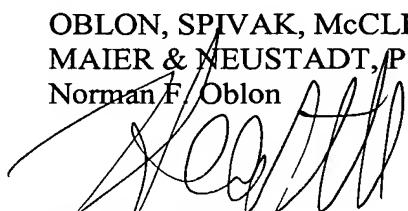
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FULL TEXT OF CASES (USPQ FIRST SERIES)
Ex parte Humber, Bruderlein, and Asselin, 217 USPQ 265 (BdPatApp&Int 1981)

Ex parte Humber, Bruderlein, and Asselin, 217 USPQ 265 (BdPatApp&Int 1981)

Ex parte Humber, Bruderlein, and Asselin

(BdPatApp&Int)
217 USPQ 265

Opinion dated Nov. 13, 1981

U.S. Patent and Trademark Office, Board of Patent Appeals and Interferences

Headnotes

PATENTS

1. Patentability — Composition of matter (§ 51.30)

Consistent with *In re Holladay*, 199 USPQ 516, applicants may show improved results for their claimed compounds in comparison with compounds that are even more closely related than those of prior art relied upon by Examiner in order to rebut *prima facie* case.

Particular patents — Chlorinated Compounds

Humber, Bruderlein, and Asselin, 13-Chloro-Benzocycloheptapyridoisoquinoline Derivatives and Process Therefor, rejection of claims 1-3 and 5-9 reversed.

Case History and Disposition:

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Appeal from Art Unit 122.

Application for patent of Leslie G. Humber, Francois T. Bruderlein, and Andre A. Asselin, Serial No. 817,660, filed July 21, 1977. From decision rejecting claims 1-3 and 5-9, applicants appeal (Appeal No. 443-29). Reversed.

Attorneys:

John W. Routh, New York, N.Y., for appellant.

Judge:

Before Blech and Goldstein, Examiners-in-Chief, and Seidleck, Acting Examiner-in-Chief.

Opinion Text

Opinion By:

Blech, Examiner-in-Chief.

This is an appeal from the final rejection of claims 1 through 3 and 5 through 9, all the claims remaining in the case.

Representatives of the claimed invention are:

1. A compound of formula 1

Tabular, graphic, or textual material set at this point is not available. Please consult hard copy or call BNA PLUS at 1-800-452-7773 or 202-452-4323.

in which R is lower alkyl selected from the group consisting of straight chain alkyl having up to six carbon atoms and branched chain alkyl having up to four carbon atoms or R is cycloalkyl having 3-6 carbon atoms, or a pharmaceutically acceptable acid addition salt thereof.

5. A method of producing neuroleptic effects in a mammal which comprises administering to said mammal an effective neuroleptic amount of a compound of Claim 1, or a pharmaceutically acceptable salt thereof.

6. A pharmaceutical composition for producing neuroleptic effects in a mammal comprising an effective neuroleptic amount of a compound of Claim 1, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier.

The references cited by the Examiner are:

Table set at this point is not available. See table in hard copy or call BNA PLUS at 1-800-452-7773 or 202-452-4323.

Winthrop et al (Winthrop), J.O.C., 27, pp. 230-240, 1962.

Voith et al (Voith), Psychopharmacologia, 42, pp. 11-20, 1975.

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Humber et al (Humber II), Abstract of Papers, 167th ACS National Meeting, Los Angeles, Calif., March 31-April 5, 1974.

Bruderlein et al (Bruderlein II), J. Med. Chem., Vol. 18, pp. 185-188, 1975.

The appealed claims stand rejected for obviousness under 35 U.S.C. 103. The Examiner considers them to be unpatentable over Voith and Bruderlein II in view of Humber I and Winthrop.

The non-chlorinated analogs of the claimed compounds, specifically also of the preferred species wherein R in the formula above set forth is isopropyl (named "Butaclamol"), are known, as shown by Voith and Bruderlein II. It is the Examiner's position that the claimed 13-Cl substituted derivatives thereof would be *prima facie* obvious to the artisan in light of the teachings of Humber I and Winthrop and that this presumption of obviousness has not been adequately rebutted by the Declaration evidence

of record.

We cannot subscribe to the Examiner's holding. It is predicated on the assumption that chlorination, in general, is well known in the pharmaceutical art and since related compounds possessing neuroleptic properties are known to be useful in either their non-chlorinated or chlorinated forms that the claimed compounds are thus obvious. Such an assumption manifestly is bottomed on the proposition that the position in the molecule at which the chlorination occurs is inconsequential and of no significance. But such is contraindicated by the very art relied upon by the Examiner, as well as by the Voith Declaration under 37 CFR 1.132. Thus, from the teaching of Winthrop the artisan would favor the 14-Cl substituted compound inasmuch only its precursor is disclosed to have increased activity. The Voith Declaration, however, convincingly demonstrates unexpectedly significant improved results for the 13-chloro vis-a-vis the 9-Cl, 12-Cl and 14-Cl substituted compounds. Such clearly could not have been foreseen and rebuts the Examiner's basic premise of equivalency of chlorination no matter at which position it is effected.

[1] Of course we appreciate and are cognizant of the Examiner's contention that no improved results have been shown for the claimed chlorinated compounds vis-a-vis the non-chlorinated analog butaclamol. However, consistent with the holding by the court in *In re Holladay*, 584 F.2d 384, 199 USPQ 516 (CCPA 1978), appellants may show improved results for their claimed compounds in comparison with compounds which, in fact, are even closer related than those of the prior art relied upon by the Examiner in order to rebut the *prima facie* case. Consequently, the comparative showing vis-a-vis the other chlorinated compounds which are more similar to those claimed than the non-chlorinated derivatives is viable probative evidence which palpably must be held as refuting the presumption of obviousness engendered by the art.

Accordingly, the decision of the Examiner is reversed.

Reversed.

- End of Case -

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